Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1.   (Currently Amended) A method for compressing data representing a 3D unit vector comprising the steps of:

a)   determining X, Y, and Z components from the vector;

b)   determining in which octant of an octant pair the vector falls to derive octant pair data;

~~b)~~c)   scaling the vector with a scaling factor;

d)   deriving compressed data values to represent the vector from the octant pair data and the scaled vector data.

2.   (Original) A method for compressing data representing a 3D unit vector according to claim 1 in which step b) uses the signs of the X, Y, and Z components to determine the octant pair data.

3.   (Currently Amended) A method for compressing data representing a 3D unit vector according to ~~claims 1 or 2~~Claim 1 in which the scaling step is applied to the X and Y components.

4.   (Original) A method for compressing data representing a 3D unit vector according to claim 3 in which the compressed data values are derived from the octant pair data and the scaled X and Y components in combination with the sign of the Z component.

5.   (Original) Apparatus for compressing data representing a 3D unit vector comprising:

a)   means for determining X, Y and Z components from the vector;

b)   means for deriving octant pair data by determining in which octant of a plurality of octant pairs the vector falls;

c)   means for scaling the vector data values;

d)   means for deriving compressed data values to represent the vector from the octant pair data and the scaled vector data.

6.   (Original) Apparatus for compressing data representing a 3D unit vector according to claim 5 in which the signs of the X, Y, and Z components are used to determine octant pair data.

7.   (Currently Amended) Apparatus for compressing data representing a 3D unit vector according to ~~claims 5 or 6~~Claim 5 in which the scaling means applies the scaling factor to the X and Y components.

8.   (Original) Apparatus for compressing data representing a 3D unit vector according to claim 5 in which the compressed data values are derived from the octant pair data and the scaled X and Y components in combination with the sign of the Z component.

9.   (Original) A method for decompressing data representing a 3D unit vector from compressed data comprising three fields, the methods comprising the steps of:

a)   identifying one of four octant pairs from data stored in the first field;

b)   extracting first and second data values from second and third fields;

c)   determining in which octant of the octant pair the vector falls;

d)   deriving X, Y and Z components in dependence of the choice of octants;

e)   normalizing the X, Y, and Z components to derive a unit vector.

10.   (Original) Apparatus for decompressing data representing a 3D unit vector from compressed data of three fields, the apparatus comprising:

a)   means for identifying one of four octant pairs from data stored in the first field;

b)   means for extracting first and second data values from the second and third fields respectively;

c)   means for determining in which octant of the identified octant pair the vector fails;

d)   means for deriving X, Y and Z components in dependence on the choice of octant;

e)   means for normalizing the X, Y and Z components to derive a unit vector.

Amendments to the Drawings

Attached are replacement drawing sheets for amended Figures 3-6.

Figures 3-6: (Original Figures 5-8)

Original Figures 5-8 are now renumbered as Figures 3-6, respectively.